

Remarks

The above Amendments and these Remarks are in reply to the Office action mailed April 23, 2002. Claims 1-31 are presented herewith for consideration. Claims 1-14, 17-20, 22-24, 26 and 30-31 have been amended.

Claims 5-9, 11-15, 17-25 and 31 are objected to because of containing informalities.

Claims 5-9, 12-15, 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten to overcome the cited claim informalities.

Claims 26 and 27 are rejected under 35 U.S.C. §102(e) as being anticipated by *Tamura et al.* (U.S. Patent No. 6,247,138).

Claims 1, 2 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Lai* (U.S. Patent No. 5,339,009).

Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Lai* as applied to claim 1 above, and further in view of *Dally et al.* ("Digital Systems Engineering", Cambridge, 1998, pp. 589-607).

Claims 10 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Lai* as applied to claim 1 above, and further in view of *Sidiropoulos et al.* ("A Semidigital Dual Delay-Locked Loop", IEEE Journal of Solid-State Circuits, Vol. 21, no. 11, Nov. 1997, pp. 1683-1692).

Claims 28 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Siridopoulos et al.*

I. Objection of Claims 5-9, 11-15, 17-25 and 31

Claims 5-9, 11-15, 17-25 and 31 are objected to because of containing informalities. As suggested by the Examiner, the informalities have been corrected as well as other informalities. It is therefore respectfully requested that the objection to the claims on these grounds be withdrawn.

II. Objection to Claims 5-9, 12-15, 30 and 31

Claims 5-9, 12-15, 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As suggested by the Examiner, the claims have been rewritten and therefore are believed allowable.

III. Rejection of Claims 26 and 27 Under 35 U.S.C. §102(e)

Claims 26 and 27 are rejected under 35 U.S.C. §102(e) as being anticipated by *Tamura et al.*

A. Claim 26

In rejecting claim 26, the Examiner stated that *Tamura et al.* teaches:

providing a supply voltage to a common source electrode of the plurality of delay elements ("CS" input to 311 in Fig. 44, also see Fig. 45 for the details of each of the delay element "D"). Office Action, page 7.

However, *Tamura et al.* does not teach "providing a supply voltage to a source of a transistor in a delay element of the plurality of delay elements" as required by claim 26. *Tamura et al.* teaches providing a "control voltage Vcs" to a gate of transistor DT. Column 32, lines 55-58. *Tamura et al.* teaches that a "delay unit D" is supplied voltage by "a high-level voltage supply line (Vcc) and a low-level voltage supply line (Vss)" and not by "providing a supply voltage to a source of a transistor

in a delay element”...and “generating the supply voltage by an amplifier responsive to the voltage signal”. Column 32, lines 49-51.

B. Claim 27

Claim 27 depends from claim 26 and therefore is patentable for at least the reasons stated above in regard to claim 26.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 26 and 27 under 35 U.S.C. §102(e).

IV. Rejection of Claims 1, 2 and 4 Under 35 U.S.C. §103(a)

Claims 1, 2 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Lai*.

A. Claim 1

Claim 1 calls for “each delay element of the plurality of delay elements includes a supply electrode to receive a supply voltage” ... and ... “an amplifier” [having] “an output to provide the supply voltage... responsive to the control signal.”

As described above, *Tamura et al.* teaches that “Vss” and “Vcc” are supply voltages that are provided to “delay unit D” and that “control voltage Vcs” is applied to a gate of transistor DT in delay unit D. The supply voltages taught by *Tamura et al.* are not provided to “a supply electrode” and “in response to the control signal” from “charge pump circuitry.”

Lai also does not teach or suggest this limitation.

B. Claim 2

Amended claim 2 calls for “the supply electrode is a transistor source,” which is not taught or suggested by *Tamura et al.* and *Lai* singly, or in combination. As stated above, *Tamura et al.* teaches that “control voltage Vcs” is provided to a gate of transistor DT and not “a transistor source.” These limitations, as well as the amendments to claims 3 and 4, are found at pages 15 and 16 of the present Application.

C. Claim 4

Amended claim 4 calls for the “supply electrode is a pull-up transistor source.” As described above, *Tamura et al.* and *Lai* singly, or in combination, does not teach this limitation.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1, 2 and 4 under 35 U.S.C. §103(a).

V. Rejection of Claim 3 Under 35 U.S.C. §103(a)

Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Lai* as applied to claim 1 above, and further in view of *Dally et al.*

Amended claim 3 calls for the “supply electrode is a load electrode source” and ... “an amplifier” [having] “an output to provide the supply voltage... responsive to the control signal” from a “charge pump circuitry.”

As described above, *Tamura et al.* and *Lai* does not teach this limitation. Further, *Dally et al.* does not teach or suggest this limitation.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claim 3 under 35 U.S.C. §103(a).

VI. Rejection of Claims 10 and 11 Under 35 U.S.C. §103(a)

Claims 10 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Lai* as applied to claim 1 above, and further in view of *Sidiropoulos et al.*

A. Claims 10 and 11

Claims 10 and 11 depend from claim 1 and therefore are patentable for at least the same reason in regard to claim 1.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 10 and 11 under 35 U.S.C. §103(a).

VII. Rejection of Claims 28 and 29 Under 35 U.S.C. §103(a)

Claims 28 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tamura et al.* in view of *Siridopoulos et al.*

A. Claims 28 and 29

Claims 28 and 29 depend from claim 26 and therefore are patentable for at least the same reason stated above in regard to claim 26.

Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 28 and 29 under 35 U.S.C. §103(a).

VIII. Art Made of Record and Not Relied Upon

Applicant's attorney has reviewed the art made of record and not relied upon, *Dally et al.* (U.S. Patent No. 6,316,987) and *Thoma et al.* (U.S. Patent No. 5,672,991), and believes it is no more relevant than the relied upon art.

IX. Conclusion

Based on the above amendments and these remarks, reconsideration of claims 1-31 is respectfully requested.

Should further questions remain, the Examiner is invited to contact the undersigned attorney by telephone.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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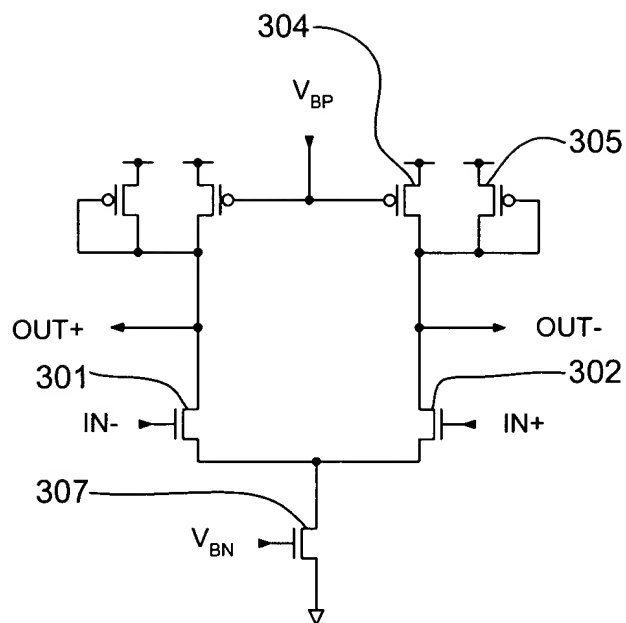


FIGURE 3
(Prior Art)

400

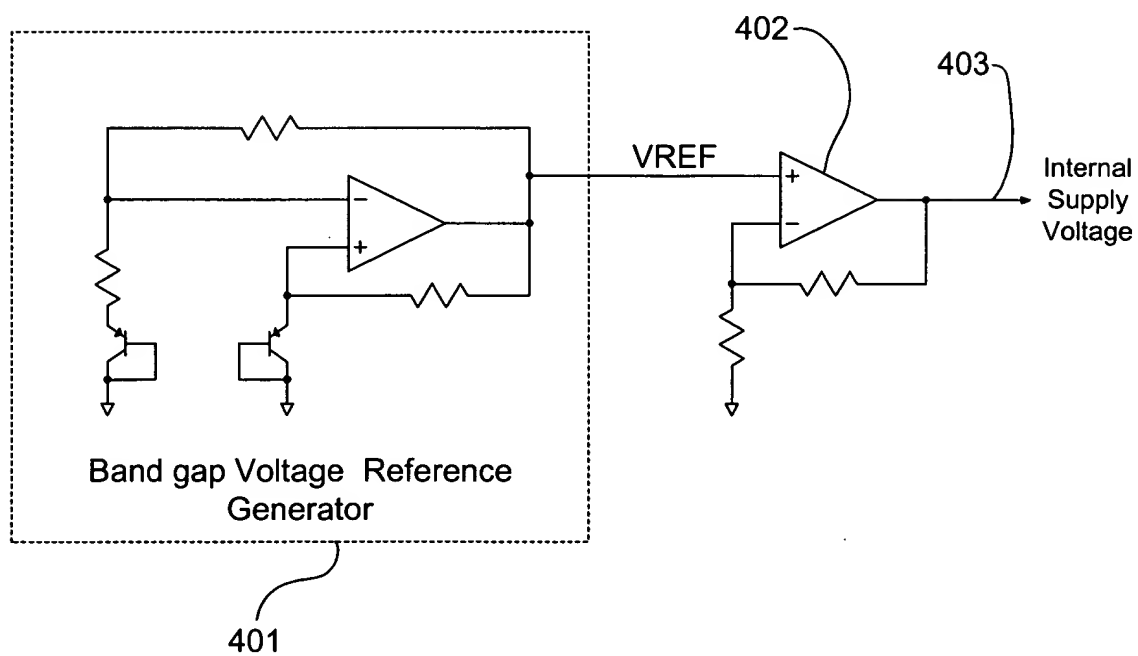


FIGURE 4
(Prior Art)

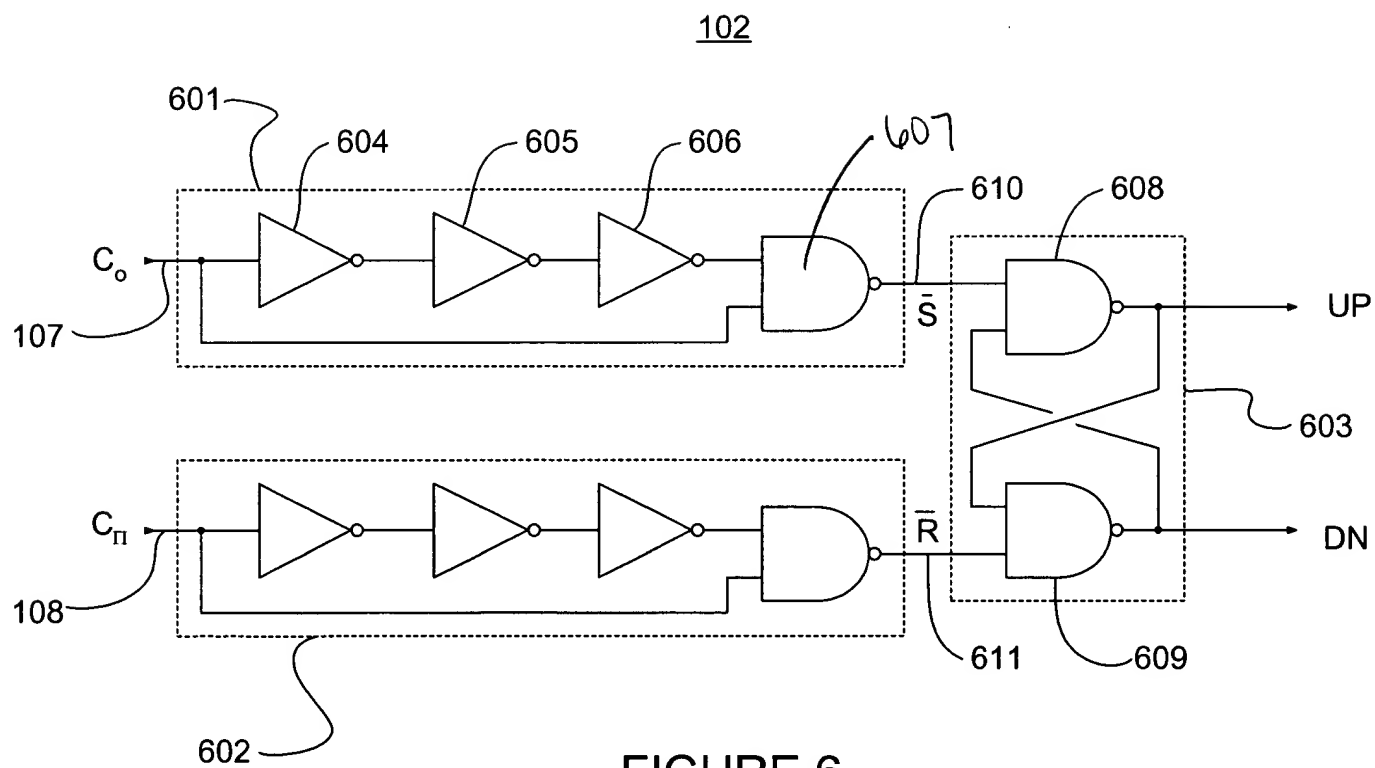


FIGURE 6